

ABSTRACTS OF PRESENTATIONS MADE AT THE ANNUAL MEETING OF THE
RAPTOR RESEARCH FOUNDATION, INC., HELD AT
FLAGSTAFF, ARIZONA, ON 2-6 NOVEMBER 1994

NORTHERN GOSHAWK SYMPOSIUM

INFLUENCE OF VEGETATION STRUCTURE ON SELECTION OF FORAGING HABITAT BY NORTHERN GOSHAWKS IN A PONDEROSA PINE FOREST

BEIER, P. *Department of Forestry, Northern Arizona University, Flagstaff, AZ 86011 U.S.A.*

Data are needed to assess the relative importance of vegetation structure versus prey abundance in selection of foraging sites by northern goshawks (*Accipiter gentilis*) in the ponderosa pine vegetation type. Therefore, we radio-tagged adult breeding goshawks on the Coconino National Forest in 1993-94, and used precise (± 25 m) radio-locations as centers of 1.8-ha plots, and contrasted vegetation structure at these plots to nearby paired plots within the same animal's home range. Thus we studied selection of sites within individual home ranges; Drennan (this symposium) indexed prey abundance at these same paired plots. We measured tree heights, tree diameters, canopy closure, ground cover, and numbers of shrubs, saplings, snags, and logs. Preliminary results from 43 pairs of plots suggest that some goshawks selected sites with more and larger trees. Results from about 60 plots and 10 goshawks will be presented.

INTERSEXUAL PREY PARTITIONING IN NORTHERN GOSHAWKS

BOAL, C.B. AND R.W. MANNAN. *School of Renewable Natural Resources, University of Arizona, Tucson, AZ 85721 U.S.A.*

A common explanation proffered for reversed sexual size dimorphism among raptors is that size dimorphism allows prey size partitioning between the sexes and reduces intersexual competition for food. We compared intersexual differences in prey captured by male and female northern goshawks (*Accipiter gentilis*) at 16 nests in northern Arizona during the breeding season of 1990-92. On basis of 192 prey items captured by male and 46 prey items captured by female goshawks, we found no difference between the sexes in mean weight of prey captured (paired *t*-test, $P = 0.14$), or in the distribution of prey sizes (Kolomogorov-Smirnoff 2-sample test, $P = 0.27$). There was no difference between the sexes in capture rates of mammals and birds ($P = 0.35$); mammals accounted for 85% and 79% of the prey captured by female and male goshawks, respectively. The sexes had a high degree of dietary overlap

(92%; Pianka's Index) but male goshawks used the available prey species less equitably than female goshawks (male = 0.37, female = 0.51; min = 0.0; max = 1.0). Prey captured in different foraging zones did not differ between the sexes ($P = 0.72$). Our findings suggest that prey partitioning during the breeding season may not be an adequate explanation for reversed sexual size dimorphism.

DEVELOPING A PRACTICAL METHOD FOR SURVEYING NORTHERN GOSHAWKS IN MANAGED FORESTS OF THE WESTERN CASCADES

BOSAKOWSKI, T. AND M.E. VAUGHN. *Beak Environmental Consultants, 12391 NE 126th Place, Kirkland, WA 98034 U.S.A.*

We developed and tested several modifications that might potentially improve the current Forest Service protocol for surveying northern goshawks (*Accipiter gentilis*) in the Pacific Northwest (an adaptation of the Kennedy and Stahlecker method). Because of the steep, rugged terrain of the Western Cascade Mountains, our survey design was intended to: (1) make greater use of numerous logging roads in managed forests, (2) improve broadcasting equipment used on road surveys, (3) increase distance between broadcast stations, (4) avoid traversing ridgetop habitat which is not normally used by goshawks for nesting, and (5) replace transects with a variable distance grid pattern to achieve complete systematic coverage. Road stations were surveyed using two outdoor powerhorn speakers (40-watt rating) powered by the vehicle cassette player. The speakers were mounted on the truck in opposite directions and were audible at 0.32-0.40 km depending on direction. To account for variation in topography, wind, and foliage density, we tested a conservative spacing maximum of 0.48 km for all broadcast stations. Foot stations were done by the U.S. Forest Service method using an amplified megaphone and mini-cassette player which had a similar broadcast range. A GIS was used to select potential nesting habitat (mean dbh > 30 cm, height > 24 m, density 250-750 trees/ha) for surveying. Then, buffer circles (240 m calling radius) were drawn centered on road stations. Along ridgelines, foot stations were set 240 m downslope. Finally, any habitat not covered by buffer circles was covered by additional foot stations. A field test of both methods in two study areas yielded comparable results in detection of goshawks, but with a savings of 36-50% in labor with the improved method.